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Hard copy (HC) 100
 Microfiche (MF) 50

SPACE OPERATIONS CONTROL CENTER SATELLITE SITUATION REPORT

VOL. 5, NO. 9

N65-26420

(ACCESSION NUMBER)	(THRU)
19	
(PAGES)	(CODE)
56567	31
(NASA CR OR TMX OR AD NUMBER)	(CATEGORY)
TMX	

MAY 15, 1965

JUN 3 1965
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GODDARD SPACE FLIGHT CENTER
 GREENBELT, MD.

SPACE OPERATIONS CONTROL CENTER
GODDARD SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

VOLUME 5 NO. 9

MAY 15, 1965

SATELLITE SITUATION REPORT

THE FOLLOWING REPORT REFLECTS DATA COMPUTED AND COMPILED BY
THE GODDARD SPACE FLIGHT CENTER, NORAD, AND, SMITHSONIAN ASTROPHYSICAL
OBSERVATORY AS OF 1200Z ON MAY 15, 1965.

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1958 LAUNCHES									
ALPHA 1	EXPLORER 1	004	US	1 FEB	104.2	33.19	1571	340	
BETA 1	ROCKET BODY	016	US	17 MAR	138.4	34.24	4316	652	
BETA 2	VANGUARD 1	005	US	17 MAR	134.0	34.22	3931	658	
1959 LAUNCHES									
ALPHA 1	VANGUARD 2	011	US	17 FEB	125.4	32.87	3283	558	
ALPHA 2	ROCKET BODY	012	US	17 FEB	129.7	32.91	3665	548	
ETA 1	VANGUARD 3	020	US	18 SEP	129.8	33.33	3713	515	
MU 1	LUNIK 1	112	USSR	2 JAN	HELIOCENTRIC ORBIT				
NU 1	PIONEER 4	113	US	3 MAR	HELIOCENTRIC ORBIT				
IOTA 1	EXPLORER 7	022	US	13 OCT	101.1	50.32	1068	557	
IOTA 2	ROCKET BODY	023	US	13 OCT	100.9	50.33	1061	541	
1960 LAUNCHES									
ALPHA 1	PIONEER 5	027	US	11 MAR	HELIOCENTRIC ORBIT				
BETA 1	ROCKET BODY	028	US	1 APR	99.1	48.40	734	697	
BETA 2	TIROS 1	029	US	1 APR	99.2	48.46	735	704	
BETA 3	NONE	101	US	1 APR	97.9	48.49	690	622	
BETA 4	NONE	115	US	1 APR	99.9	48.16	807	698	
GAMMA 2	TRANSIT 1B	031	US	13 APR	93.7	51.24	567	345	
GAMMA 4	NONE	099	US	13 APR	96.7	51.22	722	481	
EPSILON 3	NONE	036	USSR	15 MAY	90.2	64.96	331	240	
ZETA 1	MIDAS 2	043	US	24 MAY	94.3	33.03	500	465	
ETA 1	TRANSIT 2A	045	US	22 JUN	101.6	66.71	1052	620	
ETA 2	GREB	046	US	22 JUN	101.6	66.70	1050	618	
ETA 3	ROCKET BODY	047	US	22 JUN	101.4	66.69	1033	617	
ETA 4		840	US	22 JUN	101.5	66.69	1045	619	
ETA 5		841	US	22 JUN	101.5	66.69	1043	618	

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCL- NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)	
1960 LAUNCHES (CONT'D)										
IOTA 1	ECHO 1	049	US	12 AUG	113.7	47.29	1820	964		
IOTA 2	ROCKET BODY	050	US	12 AUG	118.1	47.27	1686	1501		
IOTA 3	METAL OBJECT	051	US	12 AUG	118.2	47.25	1687	1516		
IOTA 4	METAL OBJECT	052	US	12 AUG	CURRENT	ELEMENTS	NOT MAINTAINED			
IOTA 5	METAL OBJECT	053	US	12 AUG	118.4	47.28	1685	1535		
NU 1	COURIER 1B	058	US	4 OCT	107.0	28.31	1212	963		
NU 2	ROCKET BODY	059	US	4 OCT	106.6	28.21	1208	923		
XI 1	EXPLORER 8	060	US	3 NOV	112.3	49.96	2241	421		
XI 2	ROCKET BODY	062	US	3 NOV	111.8	49.98	2200	419		
XI 3	NONE	069	US	3 NOV	108.9	49.37	1951	401		
XI 4	NONE	105	US	3 NOV	110.3	50.47	2069	410		
PPI 1	TIROS 2	063	US	23 NOV	98.2	48.52	730	617		
PPI 2	ROCKET BODY	064	US	23 NOV	98.1	48.53	724	610		
PPI 3	NONE	074	US	23 NOV	98.1	48.50	724	617		
PPI 4	NONE	075	US	23 NOV	98.3	48.51	732	621		
1961 LAUNCHES										
ALPHA 1	SAMOS 2	070	US	31 JAN	94.7	97.40	546	464		
ALPHA 2	METAL OBJECT	079	US	31 JAN	94.6	97.39	541	461		
GAMMA 1	VENUS PROBE	080	USSR	12 FEB	HELIOCENTRIC ORBIT					
DELTA 2	ROCKET BODY	082	US	16 FEB	118.5	38.84	2590	637		
DELTA 3	NONE	085	US	16 FEB	CURRENT	ELEMENTS	NOT MAINTAINED			
KAPPA 1	EXPLORER 10	098	US	25 MAR	POSITION UNCERTAIN					
NU 1	EXPLORER 11	107	US	27 APR	107.9	28.76	1774	485		
OMICRON 1	TRANSIT 4A	116	US	29 JUN	103.8	66.82	995	885		
OMICRON 2	INJUN-SR-3	117	US	29 JUN	103.8	66.83	996	885		
OMICRON 3-206**	METAL OBJECTS		US	29 JUN						
RRHO 1	TIROS 3	162	US	12 JUL	100.4	47.88	816	738	\$54\$324\$150\$400	

OBJECTS IN ORBIT											
OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)		
1961 LAUNCHES (CONT'D)											
RHO 2	ROCKET BODY	165	US	12 JUL	100.3	47.91	807	740			
RHO 3	METAL OBJECT	166	US	12 JUL	98.8	47.92	792	613			
RHO 4	METAL OBJECT	167	US	12 JUL	102.0	47.85	936	769			
SIGMA 1	MIDAS 3	163	US	12 JUL	161.5	91.29	3560	3331			
SIGMA 3	METAL OBJECT	188	US	12 JUL	161.2	91.17	3536	3336			
SIGMA 4	METAL OBJECT	196	US	12 JUL	161.9	91.20	3584	3340			
UPSILON 1	EXPLORER 12	170	US	16 AUG	CURRENT ELEMENTS NOT MAINTAINED						
A DELTA 1	MIDAS 4	192	US	21 OCT	166.0	95.83	3713	3540			
A DELTA 3	METAL OBJECT	194	US	21 OCT	165.6	95.79	3740	3481			
A DELTA 4	METAL OBJECT	195	US	21 OCT	166.4	95.83	3802	3485			
A ETA 1	TRANSIT 4B	202	US	15 NOV	105.8	32.43	1113	945			
A ETA 2	TRAAC	205	US	15 NOV	105.8	32.42	1108	953			
A ETA 3	ROCKET BODY	204	US	15 NOV	105.6	32.43	1100	946			
1962 LAUNCHES											
ALPHA 1	RANGER 3	221	US	26 JAN	HELIOCENTRIC ORBIT						
ALPHA 2	ROCKET BODY	222	US	26 JAN	HELIOCENTRIC ORBIT						
BETA 1	TIROS 4	226	US	8 FEB	100.4	48.30	842	709			
BETA 2	ROCKET BODY	227	US	8 FEB	101.4	48.13	941	704			
BETA 3	METAL OBJECT	228	US	8 FEB	99.5	48.37	761	704			
BETA 4	METAL OBJECT	229	US	8 FEB	100.3	48.33	834	710			
ZETA 1	ORB.SOL.OBS. 1	255	US	7 MAR	96.0	32.84	581	552			
ZETA 2	ROCKET BODY	257	US	7 MAR	96.0	32.85	572	559			
KAPPA 1		271	US	9 APR	153.0	86.54	3403	2793			
KAPPA 3		273	US	9 APR	152.6	86.66	3370	2795			
KAPPA 4		274	US	9 APR	153.3	86.67	3427	2799			
MU 2	ROCKET BODY	282	US	23 APR	HELIOCENTRIC ORBIT						
OMICRON 1	ARIEL 1	285	US/UK	26 APR	100.4	58.88	1169	390			136.406
OMICRON 2	ROCKET BODY	288	US	26 APR	100.3	58.86	1155	392			

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCL- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1962 LAUNCHES (CONT'D)									
A ALPHA 1	TIROS 5	309	US	19 JUN	100.5	58.12	971	591	
A ALPHA 2	ROCKET BODY	311	US	19 JUN	100.4	58.10	958	595	
A ALPHA 3	METAL OBJECT	312	US	19 JUN	101.7	58.21	1078	604	
A ALPHA 4	METAL OBJECT	313	US	19 JUN	99.1	58.01	858	573	
A EPSILON 1	TELSTAR 1	340	US	10 JUL	157.8	44.78	5644	944	
A EPSILON 2	ROCKET BODY	341	US	10 JUL	157.6	44.83	5630	944	
A OMICRON 1		369	US	23 AUG	99.5	98.70	857	618	
A OMICRON 2		370	US	23 AUG	98.2	98.63	745	606	
A OMICRON 3		378	US	23 AUG	100.8	98.77	965	629	
A OMICRON 4		388	US	23 AUG	99.5	98.70	856	617	
A RHO 1	MARINER 2	374	US	27 AUG	HELIOCENTRIC ORBIT				
A RHO 2	ROCKET BODY	375	US	27 AUG	HELIOCENTRIC ORBIT				
A PSI 1	TIROS 6	397	US	18 SEP	98.7	58.32	703	693	
A PSI 2	ROCKET BODY	398	US	18 SEP	98.7	58.32	701	688	
A PSI 3	METAL OBJECT	399	US	18 SEP	99.4	58.41	767	691	
A PSI 4	METAL OBJECT	400	US	18 SEP	98.0	58.19	692	637	
B ALPHA 1	ALOUETTE	424	CANADA	29 SEP	105.5	80.49	1037	999	
B ALPHA 2	ROCKET BODY	426	US	29 SEP	105.4	80.49	1031	999	
B ALPHA 3	METAL OBJECT	510	US	29 SEP	105.4	80.52	1029	996	
B ALPHA 4	METAL OBJECT	511	US	29 SEP	105.5	80.45	1055	981	
B GAMMA 1	EXPLORER 14	432	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED				
B GAMMA 2#	ROCKET BODY	NNA	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED				
B ETA 1	RANGER 5	439	US	18 OCT	HELIOCENTRIC ORBIT				
B ETA 2	ROCKET BODY	440	US	18 OCT	HELIOCENTRIC ORBIT				
B KAPPA 1		444	US	27 OCT	127.2	71.37	3794	201	
B LAMBDA 1	EXPLORER 15	445	US	27 OCT	311.8	18.04	17390	307	
B LAMBDA 2#	ROCKET BODY	NNA	US	27 OCT	INSUFFICIENT OBSERVATIONS				
B MU 1	ANNA 1B	446	US	31 OCT	107.9	50.15	1183	1076	\$162\$324

\$136.593\$136.077

OBJECTS IN ORBIT										
OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)	
1962 LAUNCHES (CONT'D)										
B MU 2	ROCKET BODY	447	US	31 OCT	107.6	50.16	1164	1069		
B NU 3		450	USSR	1 NOV	HELIOCENTRIC ORBIT					
B TAU 1		502	US	13 DEC	106.8	70.36	1934	223		
B TAU 2	INJUN 3	504	US	13 DEC	111.2	70.36	2331	236		
B TAU 4		508	US	13 DEC	100.6	70.31	1342	218		
B TAU 5		513	US	13 DEC	106.8	70.32	1921	225		
B TAU 6		520	US	13 DEC	110.3	70.36	2240	244		
B UPSILON 1	RELAY 1	503	US	13 DEC	185.1	47.51	7449	1310		
B UPSILON 2	ROCKET BODY	515	US	13 DEC	184.8	47.50	7420	1321		
B CHI 1	EXPLORER 16	506	US	16 DEC	104.4	52.03	1175	754		
B PSI 1	TRANSIT 5A	509	US	19 DEC	99.1	90.66	732	699		
B PSI 2		514	US	19 DEC	97.6	90.76	720	575		
B PSI 3		519	US	19 DEC	99.1	90.66	734	696		
B PSI 4		523	US	19 DEC	100.2	90.50	835	702		
\$136.140; 136.620										
1963 LAUNCHES										
1963 03A		527	US	16 JAN	94.4	81.89	524	460		
1963 04A	SYNCOM 1	553	US	14 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1963 04B	ROCKET BODY	532	US	14 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1963 05A		533	US	19 FEB	97.7	100.46	797	500		
1963 05B		534	US	19 FEB	97.7	100.47	795	503		
1963 05C		535	US	19 FEB	96.8	100.51	745	470		
1963 05D		536	US	19 FEB	98.3	100.46	835	524		
1963 08B		566	USSR	2 APR	BARYCENTRIC ORBIT					
1963 09A	EXPLORER 17	564	US	3 APR	94.1	57.61	695	250		
1963 13A	TELSTAR 2	573	US	7 MAY	225.3	42.94	10747	1025		136.050

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1963 LAUNCHES (CONT'D)									
1963 13B	ROCKET BODY	575	US	7 MAY	225.0	42.74	10679	1073	
1963 14A		574	US	9 MAY	166.4	87.36	3706	3585	
1963 14B		579	US	9 MAY	166.4	87.00	4198	3095	
1963 14C		608	US	9 MAY	166.4	87.35	3676	3615	
1963 14D		589	US	9 MAY	CURRENT ELEMENTS NOT MAINTAINED				
1963 14E		602	US	9 MAY	166.1	87.36	3646	3616	
1963 14F		628	US	9 MAY	166.8	87.32	3669	3653	
1963 14G		629	US	9 MAY	166.4	87.35	3688	3602	
1963 14H		702	US	9 MAY	166.4	87.35	3665	3625	
1963 17A		580	USSR	22 MAY	89.8	48.96	291	210	\$150\$400
1963 22A		594	US	16 JUN	99.7	90.01	756	734	
1963 22B		603	US	16 JUN	99.7	90.02	758	732	
1963 22C		610	US	16 JUN	101.2	90.22	886	748	
1963 22D		611	US	16 JUN	98.1	89.82	770	569	
1963 24A	TIROS 7	604	US	19 JUN	97.4	58.23	648	623	\$136.233\$136.924
1963 24B	ROCKET BODY	605	US	19 JUN	97.3	58.24	643	619	
1963 24C	METAL OBJECT	606	US	19 JUN	97.9	58.37	674	640	
1963 24D	METAL OBJECT	607	US	19 JUN	96.9	58.06	641	578	
1963 25B		614	US	27 JUN	132.2	82.14	4100	338	
1963 26A	RESEARCH SATELLITE FOR GEOPHYSICS	612	US	28 JUN	102.0	49.75	1294	415	
1963 27A		613	US	29 JUN	94.6	82.33	523	483	
1963 30A		622	US	19 JUL	167.8	88.54	3737	3668	
1963 30B		635	US	19 JUL	167.4	88.36	3683	3673	
1963 30C		630	US	19 JUL	167.5	88.40	3723	3654	
1963 30D		624	US	19 JUL	167.6	88.16	4446	2941	
1963 30E		631	US	19 JUL	168.3	88.46	3781	3658	

OBJECTS IN ORBIT

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1963 LAUNCHES (CONT'D)									
1963 31A	SYNCOM 2	634	US	26 JUL	1437.9	32.01	35839	35803	\$136.467\$136.980 \$1814.069 \$1815.794 \$1820.177
1963 31B	ROCKET BODY	625	US	26 JUL	CURRENT ELEMENTS NOT MAINTAINED				
1963 38A		669	US	28 SEP	107.1	89.92	1117	1070	
1963 38B		670	US	28 SEP	107.4	89.92	1141	1070	
1963 38C		671	US	28 SEP	107.3	89.92	1140	1070	
1963 38D		672	US	28 SEP	107.3	89.94	1137	1172	
1963 38E		745	US	28 SEP	107.1	89.93	1113	1073	
1963 39A		674	US	17 OCT	6486.1	37.99	116296	101364	
1963 39B		675	US	17 OCT	CURRENT ELEMENTS NOT MAINTAINED				
1963 39C		692	US	17 OCT	6517.0	37.13	115446	102945	
1963 42B		682	US	29 OCT	89.9	89.95	237	234	
1963 43A	POLYOT 1	683	USSR	1 NOV	102.3	58.92	1394	342	
1963 43B		684	USSR	1 NOV	99.9	58.63	1177	324	
1963 43C		685	USSR	1 NOV	95.8	58.93	819	289	
1963 43D		686	USSR	1 NOV	99.3	59.81	1106	341	
1963 46A	EXPLORER 18 CENTAUR 2	693	US	27 NOV	5610.7	35.20	192042	4385	136.111
1963 47A		694	US	27 NOV	107.8	30.37	1771	477	
1963 47B		696	US	27 NOV	107.2	30.05	1615	579	
1963 47C		697	US	27 NOV	107.5	30.06	1637	579	
1963 47D		698	US	27 NOV	108.0	29.89	1652	616	
1963 47E		699	US	27 NOV	108.6	30.43	1746	576	
1963 47F		700	US	27 NOV	108.7	30.45	1747	578	
1963 47G		701	US	27 NOV	107.8	29.99	1638	612	
1963 47H		739	US	27 NOV	105.9	30.40	1582	487	
1963 49A		703	US	5 DEC	106.8	89.96	1087	1072	
1963 49B		704	US	5 DEC	107.1	89.95	1122	1068	\$150\$400

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCL-I- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1963 LAUNCHES (CONT'D)									
1963 49C		705	US	5 DEC	107.1	89.96	1118	1070	
1963 49D		706	US	5 DEC	107.1	89.96	1106	1077	
1963 49E		715	US	5 DEC	107.1	89.97	1117	1070	
1963 49F		753	US	5 DEC	107.1	89.96	1123	1066	
1963 53A	EXPLORER 19	714	US	19 DEC	115.3	78.68	2305	639	
1963 53B		721	US	19 DEC	115.9	78.63	2398	593	
1963 53C		722	US	19 DEC	115.8	78.60	2388	596	
1963 53D		723	US	19 DEC	115.9	78.65	2398	596	
1963 53E		724	US	19 DEC	115.9	78.62	2383	614	
1963 53F		725	US	19 DEC	115.8	78.71	2374	610	
1963 53G		726	US	19 DEC	115.8	78.58	2390	594	
1963 53H		732	US	19 DEC	115.8	78.58	2362	611	
1963 54A	TIROS 8	716	US	21 DEC	99.4	58.51	756	700	\$136.233\$136.924
1963 54B		717	US	21 DEC	99.3	58.51	747	702	
1963 54C		720	US	21 DEC	101.1	58.45	922	697	
1963 54D		736	US	21 DEC	97.7	58.51	709	586	
1964 LAUNCHES									
1964 01A		727	US	11 JAN	103.4	69.92	935	910	
1964 01B	GGSE	728	US	11 JAN	103.4	69.92	933	912	
1964 01C	EGRS 1	729	US	11 JAN	103.4	69.91	934	911	136.804
1964 01D	SOLAR RAD.	730	US	11 JAN	103.5	69.92	933	913	136.887
1964 01E		731	US	11 JAN	103.5	69.91	933	912	
1964 02A		733	US	19 JAN	101.3	99.09	848	793	
1964 02B		734	US	19 JAN	101.3	99.10	836	804	
1964 02C		735	US	19 JAN	101.3	99.11	838	806	
1964 03A	RELAY 2	737	US	21 JAN	194.7	46.43	7458	2042	136.621\$136.142

OBJECTS IN ORBIT

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1964 LAUNCHES (CONT'D)									
1964 03B		738	US	21 JAN	194.8	46.31	7421	2083	
1964 04A	ECHO 2	740	US	25 JAN	108.3	81.48	1337	964	136.021;136.170
1964 04B		741	US	25 JAN	108.9	81.51	1311	1044	
1964 04C		742	US	25 JAN	108.8	81.49	1307	1041	
1964 04D		743	US	25 JAN	108.8	81.55	1311	1037	
1964 04E		749	US	25 JAN	96.4	81.56	881	287	
1964 05A	SATURN 5	744	US	25 JAN	92.9	31.45	573	251	
1964 06A	ELEKTRON 1	746	USSR	30 JAN	169.3	60.91	7125	392	
1964 06B	ELEKTRON 2	748	USSR	30 JAN	1356.3	58.73	67252	1168	
1964 06C		750	USSR	30 JAN	168.0	60.87	7003	413	
1964 06D		751	USSR	30 JAN	1384.1	58.89	68351	1174	
1964 11A		759	US	28 FEB	94.6	82.07	508	492	
1964 11B		760	US	28 FEB	92.9	82.04	417	416	
1964 11C		761	US	28 FEB	93.2	82.08	434	430	
1964 15A	ARIEL 2	771	US/UK	27 MAR	100.2	51.71	1250	283	136.557
1964 15B		775	US	27 MAR	99.6	51.68	1199	283	
1964 15C		847	US	27 MAR	103.5	51.39	1482	369	
1964 16D		785	USSR	2 APR	HELIOCENTRIC ORBIT				
1964 19B	POLYOT 2	784	USSR	12 APR	91.8	58.06	424	297	
1964 26A		801	US	4 JUN	103.1	90.51	954	857	
1964 26B		805	US	4 JUN	103.9	90.22	977	908	\$150\$400
1964 26C		806	US	4 JUN	102.3	90.85	952	786	
1964 26D		809	US	4 JUN	103.1	90.51	956	855	
1964 30A		811	US	13 JUN	89.8	114.99	258	256	
1964 31A		812	US	18 JUN	101.6	99.78	844	825	
1964 31B		813	US	18 JUN	101.6	99.77	845	826	
1964 31C		815	US	18 JUN	101.6	99.79	847	821	
1964 35A		824	US	2 JUL	94.8	82.09	530	494	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1964 LAUNCHES (CONT'D)									
1964 38A	ELEKTRON 3	829	USSR	10 JUL	168.1	60.82	7028	398	
1964 38B	ELEKTRON 4	830	USSR	10 JUL	1313.8	59.50	65923	795	
1964 38C		831	USSR	10 JUL	168.5	60.83	7055	397	
1964 38D		832	USSR	10 JUL	1341.2	59.70	67019	799	
1964 40A		836	US	17 JUL	6024.5	39.02	104188	102407	
1964 40B		837	US	17 JUL	6004.9	41.17	112550	93567	
1964 40C		838	US	17 JUL	2349.4	38.30	104005	319	
1964 41B		843	US	28 JUL	BARYCENTRIC ORBIT				
1964 45B		851	US	14 AUG	126.8	95.72	3696	272	\$136.470\$136.980
1964 47A	SYNCOM 3	858	US	19 AUG	1436.7	.20	35810	35786	\$1820.177\$1815.794
									\$1814.931
1964 47B		862	US	19 AUG	CURRENT ELEMENTS NOT MAINTAINED				
1964 49D	COSMOS 41	869	USSR	22 AUG	714.5	65.82	39498	697	
1964 49E		898	USSR	22 AUG	716.2	65.55	39785	492	
1964 50A	COSMOS 42	864	USSR	22 AUG	94.9	48.95	802	220	
1964 50B		866	USSR	22 AUG	93.2	48.91	614	213	
1964 50C	COSMOS 43	867	USSR	22 AUG	94.9	48.96	795	222	
1964 51A	EXPLORER 20	870	US	25 AUG	103.9	79.92	1021	869	\$136.326\$136.350
									\$136.680
1964 51B		871	US	25 AUG	103.9	79.91	1015	870	
1964 51C		873	US	25 AUG	103.5	79.86	992	861	
1964 51D		874	US	25 AUG	103.5	79.84	1044	810	
1964 51E		875	US	25 AUG	103.6	79.83	1049	807	
1964 52A	NIMBUS 1	872	US	28 AUG	98.3	98.68	933	427	136.499
1964 52B		878	US	28 AUG	98.3	98.68	934	427	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1964 LAUNCHES (CONT'D)									
1964 53A	COSMOS 44	876	USSR	28 AUG	99.5	65.06	873	600	
1964 53B		877	USSR	28 AUG	99.6	65.10	805	673	
1964 54A	OGO 1	879	US	5 SEP	3842.6	39.31	146061	3715	\$136.200\$400.205 \$400.850
1964 60A	EXPLORER 21	889	US	4 OCT	2080.3	33.72	94288	917	136.146
1964 63A		893	US	6 OCT	106.3	89.92	1074	1041	
1964 63B		897	US	6 OCT	106.6	89.93	1082	1058	
1964 63C		900	US	6 OCT	106.6	89.93	1086	1052	
1964 63D		901	US	6 OCT	106.6	89.91	1085	1059	
1964 63E		902	US	6 OCT	106.6	89.95	1080	1062	
1964 63F		903	US	6 OCT	106.6	89.92	1091	1052	
1964 64A	EXPLORER 22	899	US	10 OCT	104.8	79.70	1080	889	\$136.171\$162\$324 \$20\$40\$41\$360
1964 64B		907	US	10 OCT	104.7	79.70	1079	888	
1964 64C		976	US	10 OCT	104.1	79.35	1071	832	
1964 64D		977	US	10 OCT	105.5	80.06	1135	902	
1964 69A	COSMOS 49	913	USSR	24 OCT	90.7	48.94	361	247	
1964 72A		922	US	4 NOV	94.9	82.05	521	514	
1964 72B		925	US	4 NOV	94.9	82.04	521	505	
1964 72C		926	US	4 NOV	94.6	82.07	502	501	
1964 72D		927	US	4 NOV	94.7	82.02	507	498	
1964 73A	MARINER 3	923	US	5 NOV	HELIOCENTRIC ORBIT				
1964 74A	EXPLORER 23	924	US	6 NOV	99.2	51.97	979	463	\$136.079\$136.858
1964 76A	EXPLORER 24	931	US	21 NOV	115.9	81.39	2454	533	136.709
1964 76B	EXPLORER 25	932	US	21 NOV	116.2	81.38	2497	527	136.293\$136.860
1964 76C		933	US	21 NOV	116.2	81.37	2494	532	
1964 76D		934	US	21 NOV	116.3	81.24	2515	512	
1964 76E		935	US	21 NOV	116.3	81.38	2495	535	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCLI- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1964 LAUNCHES (CONT'D)									
1964 76F		936	US	21 NOV	115.9	81.30	215Q	539	
1964 76G		937	US	21 NOV	116.4	81.21	2446	583	
1964 76H		939	US	21 NOV	115.4	81.30	2430	520	
1964 76I		940	US	21 NOV	116.1	81.20	2549	463	
1964 76J		941	US	21 NOV	116.1	81.27	2490	520	
1964 76K		960	US	21 NOV	116.4	81.41	2513	525	
1964 77A	MARINER 4	938	US	28 NOV	HELIOCENTRIC ORBIT				
1964 77B		942	US	28 NOV	HELIOCENTRIC ORBIT				
1964 78C	ZOND 2	945	USSR	30 NOV	HELIOCENTRIC ORBIT				
1964 80A	COSMOS 51	947	USSR	9 DEC	91.7	48.75	455	252	
1964 83A		953	US	13 DEC	106.0	89.99	1064	1021	
1964 83B		956	US	13 DEC	106.3	90.00	1078	1035	
1964 83C		959	US	13 DEC	106.3	89.99	1086	1028	
1964 83D		965	US	13 DEC	106.3	89.99	1085	1030	136.561\$162\$324
1964 83E		966	US	13 DEC	106.3	89.99	1082	1033	\$150\$400
1964 83F		967	US	13 DEC	106.3	89.99	1082	1031	
1964 83G		1099	US	13 DEC	106.3	89.98	1085	1029	
1964 84A	SAN MARCO 1	957	ITALY	15 DEC	92.6	37.77	604	194	
1964 86A	EXPLORER 26	963	US	21 DEC	455.7	20.18	26200	272	136.273
1965 LAUNCHES									
1965 03A		973	US	19 JAN	97.6	98.75	831	463	
1965 03B		974	US	19 JAN	95.0	98.80	589	436	
1965 03C		975	US	19 JAN	95.6	98.75	647	443	
1965 04A	TIROS 9	978	US	22 JAN	119.2	96.41	2580	709	\$136.231\$136.919
1965 04B		979	US	22 JAN	119.3	96.44	2585	715	
1965 04C		1312	US	22 JAN	118.0	96.39	2514	674	
1965 04D		1313	US	22 JAN	120.4	96.42	2662	737	
1965 06A	COSMOS 53	983	USSR	30 JAN	97.8	48.72	1084	220	

OBJECTS IN ORBIT

OBJECT	CODE NAME	CATALOGUE NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCL-I- NATION	APOGEE Km.	PERIGEE Km.	TRANSMITTING FREQ. (MC/S)	
1965 LAUNCHES (CONT'D)										
1965 06B		984	USSR	30 JAN	97.0	48.71	998	229		
1965 07A	ORB.SOL.OBS. 2	987	US	3 FEB	96.5	32.85	627	548	136.712	
1965 07B		988	US	3 FEB	96.6	32.85	633	551		
1965 08A		1000	US	11 FEB	145.6	32.13	2799	2779		
1965 08B		1001	US	11 FEB	145.4	32.14	2795	2762		
1965 08C		1002	US	11 FEB	145.7	32.11	2809	2776		
1965 09A	PEGASUS 1	1085	US	16 FEB	97.0	31.74	732	495	\$136.410;136.890	
1965 09B		1088	US	16 FEB	97.1	31.74	733	500		
1965 10B		1087	US	17 FEB	BARYCENTRIC ORBIT					
1965 11A	COSMOS 54	1089	USSR	21 FEB	104.6	56.08	1690	262		
1965 11B	COSMOS 55	1090	USSR	21 FEB	104.9	56.05	1708	266		
1965 11C	COSMOS 56	1091	USSR	21 FEB	104.1	56.06	1638	262		
1965 11D		1092	USSR	21 FEB	106.1	56.11	1810	277		
1965 11E		1094	USSR	21 FEB	102.6	56.02	1466	259		
1965 14A	COSMOS 58	1097	USSR	26 FEB	96.8	65.03	647	563		
1965 14B		1098	USSR	26 FEB	96.9	65.06	706	512		
1965 16A	GREB	1271	US	9 MAR	103.5	70.09	940	910		
1965 16B	GRAVITY GRADIENT II	1244	US	9 MAR	103.5	70.07	940	910	136.742	
1965 16C	GRAVITY GRADIENT III	1292	US	9 MAR	103.5	70.09	942	908	136.767	
1965 16D	SOLAR RAD.	1291	US	9 MAR	103.5	70.09	940	910	136.800	
1965 16E	EGRS III	1208	US	9 MAR	103.5	70.08	941	908	136.841	
1965 16F	OSCAR III	1293	US	9 MAR	103.5	70.09	940	908		
1965 16G	SURCAL	1310	US	9 MAR	103.5	70.09	948	901		
1965 16H	DODECAHEDRON	1272	US	9 MAR	103.5	70.09	941	908		
1965 16J	ROCKET BODY	1245	US	9 MAR	103.5	70.10	940	906		
1965 17A		1303	US	11 MAR	93.7	89.98	689	204		
1965 17B	EGRS II	1250	US	11 MAR	97.8	89.98	1014	294	136.838	
1965 17C		1228	US	11 MAR	97.7	89.98	1010	288		
1965 17D		1248	US	11 MAR	97.7	90.00	1011	293		
1965 17E		1251	US	11 MAR	96.6	90.00	1195	172		

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCL- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1965 LAUNCHES (CONT'D)									
1965 17F		1249	US	11 MAR	95.9	90.00	845	272	
1965 17G		1319	US	11 MAR	95.4	89.99	703	254	
1965 17H		1323	US	11 MAR	96.6	89.89	955	197	
1965 20A	COSMOS 61	1267	USSR	15 MAR	104.8	56.03	1701	265	
1965 20B	COSMOS 62	1268	USSR	15 MAR	104.6	56.04	1682	263	
1965 20C	COSMOS 63	1269	USSR	15 MAR	104.1	56.03	1634	263	
1965 20D		1270	USSR	15 MAR	105.0	55.90	1704	240	
1965 20E		1335	USSR	15 MAR	112.2	56.14	2063	591	
1965 20F		1336	USSR	15 MAR	106.6	56.11	1794	345	
1965 20G		1337	USSR	15 MAR	105.8	55.93	1736	304	
1965 20H		1338	USSR	15 MAR	106.1	56.26	1755	335	
1965 20J		1339	USSR	15 MAR	107.5	55.97	1760	464	
1965 20K		1340	USSR	15 MAR	105.6	56.09	1781	257	
1965 20L		1341	USSR	15 MAR	106.7	56.01	1814	336	
1965 20M		1342	USSR	15 MAR	107.7	56.11	1882	361	
1965 20N		1343	USSR	15 MAR	105.5	56.05	1728	292	
1965 20P		1344	USSR	15 MAR	106.0	56.11	1794	292	
1965 20Q		1345	USSR	15 MAR	108.8	56.01	1890	452	
1965 20R		1346	USSR	15 MAR	108.8	56.14	1926	415	
1965 20S		1347	USSR	15 MAR	109.6	56.08	1814	599	
1965 20T		1348	USSR	15 MAR	109.5	56.16	1947	459	
1965 20U		1349	USSR	15 MAR	108.4	56.14	1895	409	
1965 20V		1350	USSR	15 MAR	103.0	55.95	1307	272	
1965 20W		1351	USSR	15 MAR	109.2	56.00	1919	460	
1965 20X		1352	USSR	15 MAR	105.7	56.09	1763	277	
1965 20Y		1353	USSR	15 MAR	103.7	55.88	1467	293	
1965 20Z		1354	USSR	15 MAR	107.7	56.16	1859	372	
1965 20AA		1355	USSR	15 MAR	105.2	56.13	1731	269	
1965 20AB		1356	USSR	15 MAR	102.4	56.19	1456	230	

OBJECTS IN ORBIT

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>PERIOD MINUTES</u>	<u>INCL- NATION</u>	<u>APOGEE Km.</u>	<u>PERIGEE Km.</u>	<u>TRANSMITTING FREQ. (MC/S)</u>
1965 LAUNCHES (CONT'D)									
1965 21A		1273	US	18 MAR	97.5	99.03	759	526	
1965 21B		1288	US	18 MAR	97.0	99.16	707	528	
1965 21C		1289	US	18 MAR	97.6	99.03	763	524	
1965 21D		1290	US	18 MAR	97.3	99.02	742	508	
1965 23B		1298	US	21 MAR	BARYCENTRIC ORBIT				
1965 27A		1314	US	3 APR	111.5	90.21	1320	1275	
1965 27B	EGRS IV	1315	US	3 APR	111.4	90.22	1322	1267	136.840
1965 27C		1316	US	3 APR	111.5	90.21	1321	1274	
1965 28A	EARLY BIRD	1317	US	6 APR	1437.0	.13	36590	35019	
1965 28B	ROCKET BODY	1318	US	6 APR	672.5	18.14	36639	1454	
1965 30A	MOLNIA 1	1324	USSR	23 APR	720.5	65.27	39963	530	
1965 30B		1325	USSR	23 APR	94.3	64.83	744	197	
1965 30C	ROCKET BODY	1326	USSR	23 APR	93.8	64.84	688	202	
1965 31B		1329	US	28 APR	95.1	95.22	548	504	
1965 31G		1357	US	28 APR	95.2	95.22	557	501	
1965 32A	EXPLORER 27	1328	US	29 APR	107.8	41.17	1316	936	\$136.740\$162\$324 \$20\$40\$41\$360
1965 32B		1358	US	29 APR	107.8	41.17	1316	935	
1965 33A		1330	US	29 APR	90.7	85.03	436	179	
1965 33B		1367	US	29 APR	97.6	84.87	1068	146	
1965 34A		1359	US	6 MAY	157.0	32.07	3741	2782	
1965 34B		1360	US	6 MAY	315.0	31.36	15103	2826	
1965 34C		1361	US	6 MAY	145.6	32.11	2795	2780	
1965 35B		1363	USSR	7 MAY	89.5	65.02	244	226	

PLEASE ADD THE FOLLOWING TO THE DECAYED OBJECTS LIST:

<u>OBJECT</u>	<u>CODE NAME</u>	<u>CATALOGUE NUMBER</u>	<u>SOURCE</u>	<u>LAUNCH</u>	<u>DECAY</u>
1963 17C		582	USSR	22 MAY	12 MAY 65
1964 80B		948	USSR	9 DEC	11 MAY 65
1965 29B	ROCKET BODY	1321	USSR	17 APR	6 MAY 65
1965 31A		1327	US	28 APR	3 MAY 65
1965 31C		1331	US	28 APR	30 APR 65
1965 31D		1332	US	28 APR	30 APR 65
1965 31E		1333	US	28 APR	3-4 MAY 65
1965 31F		1334	US	28 APR	8 MAY 65
1965 35A	COSMOS 66	1362	USSR	7 MAY	15 MAY 65
1965 35C		1364	USSR	7 MAY	9 MAY 65
1965 35D		1365	USSR	7 MAY	9 MAY 65
1965 36A	LUNIK 5	1366	USSR	9 MAY	12 MAY 65
1965 36B		1368	USSR	9 MAY	10 MAY 65
1965 36C		1369	USSR	9 MAY	10 MAY 65

* APHELION PERIHELION IN ASTRONOMICAL UNITS, INCLINATION TO ECLIPTIC.
 ** TWO HUNDRED AND FOUR METAL OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH
 1961 OMICRON 1 AND 1962 OMICRON 2. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE
 FOUND IN THE DECAYED OBJECTS LIST.
 \$ TRANSMITTING ON COMMAND ONLY.
 & TRANSMITTING WHEN IN SUNLIGHT ONLY.
 # NO CATALOGUE NUMBER ASSIGNED.